

Large Optics Draft Polishing Specs LIGO-E080500-00												
Polishing Quantity	10	10	9	6	3	3	2	4				
Type	ITM	ETM	CP	BS	FM	PR3	F-PR3	SR3				
Blank spec	E080031	E080047	E080037	E080035	E080045	E080041	E080041	E080041				
Blank Dwg	D080039	D080055	D080051	D080050	D080054	D080053	D080053	D080053				
Polish Spec												
Polish Dwg												
Serial Number	ITM XX	ETM XX	CPXX	BSXX	FMXX	PR3XX	F-PR3XX	SR3XX				
Surface Quality												
Max Scratches S1 inside 120mm (um^2 x 10^-3)	20000	20000	500000	500000	500000	500000	500000	500000				
Max Scratches S1 outside 120mm (um^2 x 10^-3)	500000	500000										
Max Scratches S2 inside 120mm (um^2 x 10^-3)	240000	1000000	1000000	1000000	NS	NS	NS	NS				
Max Point Defects S1 Inside 120mm	10	10	50	50	50	50	50	50				
Max Point Defect Density S1 inside 120mm	1 per 4mm^2	1 per 4mm^2	5per 4mm^2	5per 4mm^2	5per 4mm^2	5per 4mm^2	5per 4mm^2	5per 4mm^2				
Max Point Defects S1 outside 120mm	100	100	NS	NS	NS	NS	NS	NS				
Max Point Defects inside 120 mm dia S2	100	100	100	100	NS	NS	NS	NS				
Figure measured over 160mm (225mm for BS, FM)												
S1 ROC (m)	1970	2192	Flat in tranx	Flat	Flat	34	31.55	34				
Tolerance (±m)	10	10	Bill >200Km	Asymmetric Pref cc for coating	Bill >200Km	0.17	0.16	0.17				
S1 ROC goal	± 3	± 3	NS	NS	NS	NS	NS	NS				
S1 Astigmatism Max (nm)	3	3	8	8	8	200	200	200				
S2	Flat ref S1	Flat	NS	Flat	Flat	Flat	Flat	Flat				
Tolerance (m)	relative to S1 ± 10	>7000	NS	Asymmetric	>7000	>7000	>7000	>7000				
Mounting Flat Figure	< 10 nm rms	<10 nm rms	NS	NS	NS	NS	NS	NS				
Surface Error (-T, P, A) to 1mm-1												
S1 over 300 mm dia max nm rms	2.5	2.5	4	3	3	3	3	3				
S1 over 160 mm dia max nm rms	0.7	0.7	3	2	2	2	2	2				
S1 over 160 mm dia max nm rms Goal	0.3	0.3	NS	NS	NS	NS	NS	NS				
S2 over 300 mm dia max nm rms	4	40	4	4	40	40	40	40				
S2 over 160 mm dia max nm rms	2	NS	2	2	NS	NS	NS	NS				
HSF error (uroughness) 1 to 750/mm												
S1 nm	0.16	0.16	0.5	0.5	0.5	0.5	0.5	0.5				
S2 nm	0.5	2	0.5	0.5	NS	NS	NS	NS				
DRAWING PROPERTIES												
Diameter mm	340	340	340	370	370	265	265	265				
Tolerance mm	± 0.25	± 0.25	± 0.25	± 0.25	± 0.25	± 0.25	± 0.25	± 0.25				
Thickness mm	200	200	130	60	60	101.4	101.4	101.4				
Tolerance mm	± 0.5	± 0.5	± 0.5	± 0.5	± 0.5	± 0.5	± 0.5	± 0.5				
Wedge deg.T080078-05 10-3-08	0.08 A	0.08 A	0.04	0.04 S	0.04 S	0.6	0.6	0.6				
Tolerance deg.	±0.016	±0.08	±0.016	± 0.008	±0.08	±0.08	±0.08	±0.08				
Wedge orientation	V	V	H	H	H	V	V	V				
CERTIFICATIONS / DATA												
Scratches & Point defects methods 1&2 Hand Sketch	x	x	x	x	x	x	x	x				
Scratches & Point defects method 3, digital images	x	x	x	x	x	x	x	x				
Figure Interferometric data	x	x	x	x	x	x	x	x				
LSF errors Interferometric data	x	x	x	x	x	x	x	x				
HSF errors Interferometric data	x	x	x	x	x	x	x	x				